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DISABILITY MEDICINE

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Editorial Board

Contents

EDITORIAL:

Impairment Evaluations: Physicians vs. non-Physicians; who's Prerogative Is this Anyway?

Physician extenders and paramedicals, including physical therapist, occupational therapists and others are increasingly targeted by physician member organizations for membership and education and training in methods of permanent medical impairment evaluation. This is purportedly an educational effort; however, this has raised serious concern among some end users of the impairment evaluations. Some members of these primarily physician membership organizations have also passionately objected to the opening up of the membership to non physicians. The main concern is that while these educational efforts are laudable, it can easily be construed that with the "proper training" these non-physician individuals qualify to do impairment rating.

Obviously, as the economic pressure is mounting on various physician membership organizations and as need arises to look for revenues elsewhere it may appear reasonable at the time to open doors to paramedical groups to increase the membership and ultimately the revenue. In recent years we have seen at least two such organizations which were originally physician only memberships association have now lowered the threshold to allow paraprofessional to become members presumably to give the organization much needed financial shot in the arm.

Recently your editor was copied on a letter from the medical director of a Labor Commission from a large state expressing the distress and serious concern over these new trends of allowing paraprofessional non-physician memberships of the organizations primarily organized to provide credentials for physicians performing impairment evaluations. The main concern raised both inside and outside these August bodies is that lowering the bar to membership would lead to misuse and perhaps abuse of these credentials by non-physician and transform into a credential to do impairment evaluations.

The question, Impairment Evaluations: Physicians vs. non-Physicians; who's Prerogative is this anyway, is a legitimate one. Who then does the impairment evaluations? American Medical Association Guides to the Evaluation to Permanent Impairment 5th Edition is unambiguous about this issue and states "an impairment evaluation is a medical evaluation preformed by a physician, using a standard method as outlined in the guides to determine permanent impairment associated with a medical condition (subsection 2.1, page 18.) The Guides further go on to say in the next subsection (2.2) "impairment evaluations are preformed by a licensed physician". It then follows that anyone including any organization, promoting and encouraging impairment evaluations by anyone other than by a licensed physician is acting inconsistent with the AMA Guides.

In this regard it should be noted that impairment evaluations cannot be done until a person has reached maximum degree of medical improvement (MMI) which is a medical decision and can only be determined by a physician. The other steps involved in doing an

impairment evaluation are also critical and require several distinct physician generated decisions to give credence to an impairment evaluation which is generally part of an independent medical examination. These include the various diagnoses, how they correlate to the clinical findings, current clinical status including the MMI. This should follow a step by step analysis and lead to calculation of permanent impairment using valid and standardized rating criteria which is based both on clinical findings established during the medical examination and information found in the medical records.

Some compensation systems also ask that medical examiner identify and list any factors both occupational and non-occupational that caused or significantly contributed to the injury or disease and current permanent impairment and hence provide apportionment. Furthermore this process may need assistance in returning the individual with residual permanent impairment, if any, to productive life and gainful employment. This requires capabilities assessment and identifying needs for any maintenance treatment or even future medical treatment.

Obviously, only a physician can best address all these issues. This is not to say that physician does not need input from other paraprofessionals such as occupational therapist, physical therapists and others; however the approach described above is a team approach for impairment evaluation with physician as a leader of that team.

No doubt that raising costs in maintaining memberships concurrently in several organizations would continue to pressure physicians to be selective in membership, causing financial drain on these organizations, leading to these innovative solutions of lowering the threshold for membership. It is imperative, however that at this critical time when the indemnity, disability and litigation cost is reaching an all time high threatening to bankrupt many systems that the organizations with the basic mission to credential quality impairment evaluators be absolutely certain that their well meaning actions do not sanction, support or endorse any one other than physicians for the medical impairment ratings. The focus should be on training and credentialing quality medical practitioners with integrity and intellectual honesty.

Disability Medicine would welcome a dialogue on this issue from readership in the form of letters to Editor.

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Editor in Chief

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Original Research Article

Screening to identify people at risk of long-term incapacity: a conceptual and scientific review.

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Key words: benefits, disability, incapacity, prediction, psychosocial, review, return to work, risk, social security, socio-demographic

Abstract

Objectives: This project aimed to review the concepts and utility of screening for the risk of long-term incapacity associated with the common, relatively minor, health complaints associated with receipt of social security benefits (predominantly musculoskeletal disorders, mental health problems, and cardio-respiratory symptoms).

Methods: A systematic electronic literature search yielded existing reviews concerning clinical and psychosocial data. Alternative search strategies were required to obtain un-indexed reports of large individual studies based on socio-demographic and administrative data. From some 1000 retrieved titles, 28 reviews and 31 individual studies met the selection criteria, and provided the material for a structured review.

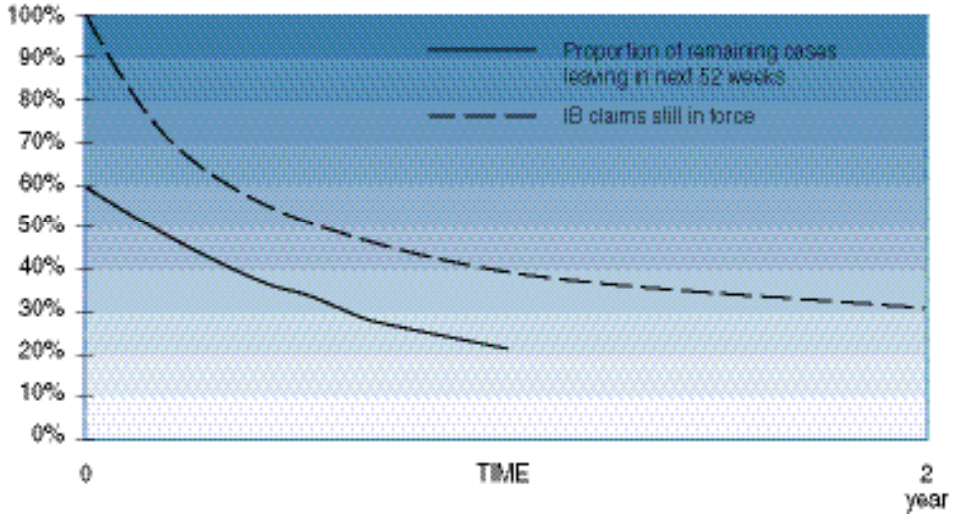
Results: The findings show there is strong evidence that both socio-demographic and clinical psychosocial data contain strong predictors for long-term incapacity, yet they do not combine into a simple, robust, and universal screening tool. Whilst screening is possible and potentially valuable, its utility is strongly dependent on timing and purpose. Socio-demographic data can be strong predictors at an early stage, but may be immutable. Psychosocial predictors are effective somewhat later, yet have the advantage of being suitable for guiding rehabilitation strategies.

Conclusions: There is a practical window for screening for long-term incapacity that extends between about one and six months. Socio-demographic and clinical data are interrelated, and their utility may vary over time; both may be combined into a logical and practical sequence in the screening process.

Introduction

In countries with social security systems, the growth of long-term incapacity is a major societal concern. By way of example, approximately 40% of workers in the UK who move to Incapacity Benefit (after 26 weeks of Statutory Sick Pay) will remain on benefits for 52 weeks, and these benefit recipients are then likely to continue to long-term incapacity (Figure 1). The diminishing *rate* of outflow from benefits means that the *probability* of coming off benefit diminishes with duration of time on benefit. These patterns are not unique to the UK, are similar across medical conditions, and resemble other international data. [1;2]

Figure 1. Incapacity benefits (IB) inflow - proportion surviving on IB over time and proportion of cases who left IB in the next year over time.



For most individuals, return to work has health as well as social benefits, so arguably it would be better for them, for employers, and for social security agencies to help them return to the labour market as rapidly as possible, following the principle of *work for those who can and security for those who can't.* [3] It would be most efficient and cost-effective if interventions could be directed to those likely to go on to long-term incapacity, which depends on being able to identify those at risk of long-term incapacity.

The majority of incapacity benefits, in the UK as elsewhere, go to people with relatively minor health complaints, [4] such as musculoskeletal, mental health and cardio-respiratory conditions. Many of these conditions are potentially remediable, and indeed for many a return to normal work is a realistic objective. Therefore, these conditions represent a suitable target for screening in order to identify individuals at risk of long-term incapacity, who are likely to be amenable to appropriate interventions.

This review paper, then, considers the evidence on a number of issues that need to be addressed, including the distinction and relation between (a) screening to identify those at risk of long-term incapacity, and (b) assessing the obstacles to coming off benefit in those at risk, and so identifying what can be done to help return to work. The aim is to inform on whether practical methods of screening, which could be linked to rehabilitation programmes or other work-focused interventions, might be developed.

Before describing the methods and results of the review it is useful briefly to consider some conceptual aspects of screening; these are given more detailed coverage elsewhere. [1]

Screening

Perhaps the most usual application for screening is the primary prevention of morbidity. This ranges from diagnostic screening at the population level to pre-placement selection of workers for particular jobs. Such applications, whilst well grounded in medical science, are not without statistical and practical problems [5;6] that are shared with other applications using different outcomes. Those outcomes include clinical recovery, coming off benefits and return to work, but they may not be synonymous. Some people who are 'chronically ill' or 'disabled' do return to work; others may 'recover' from a clinical perspective but nevertheless remain on benefits. Some may come off benefits but not return to work; they may leave the labour force. The application of screening for this review is identification of benefits recipients who are likely to go on to long-term incapacity, as opposed to recovery and return to work.

Methods of screening

Historically and conceptually, there are two different kinds of screening: actuarial / administrative and clinical / psychosocial.

- *Actuarial assessment of risk* forms the historical basis of the insurance industry, which has developed sophisticated methods of identifying and weighting risk. The data are largely epidemio-logical and demographic, available in an insurance setting or in an administrative database. They are *associated* with the risk, whether or not they have any causal or explanatory significance regarding the outcome or possible intervention.
- *Clinical/psychosocial screening* is more focused on the mechanisms whereby some people develop long-term incapacity and, thus, what might be done about it. Historically, medical screening was based on isolated items of information and clinical judgement with little scientific basis. Modern approaches have a strong scientific and statistical foundation, [7] based on clinical and psychosocial measures, clinical outcomes and return to work.

It is important to distinguish characteristics that are *associated* with long-term incapacity on cross-sectional analysis from those characteristics which, if identified early in a longitudinal study, provide accurate prediction of those individuals who do actually go on to long-term incapacity. [8] Some risk factors will simply be 'markers' that carry little or no further significance, some will be causal and explanatory 'factors', whilst others comprise 'pantechnicon' variables containing a multiplicity of information reflecting complex underlying issues (e.g. gender and marital / family status). Thus, predictors of long-term incapacity extend beyond clinical obstacles to recovery / return to work (the so-called yellow and blue flags). [9-11] Not all predictors are potential targets for intervention, but others may inform on work-focused interventions.

Timing

The time course of disability and incapacity is crucial to developing effective screening – different predictors emerge at different points on the time-line. The development of long-term incapacity involves bio-psycho-social changes which may substantially influence further progress and constitute obstacles to coming off benefits and returning to work. [12] This evolution means that predictors of long-term incapacity, their relative strength, and the accuracy of prediction may vary during different stages of sickness absence and incapacity.

At different times in the course of incapacity, screening also faces very different statistical tasks. On day-1, the task of screening would be to identify the 1-2% of individuals who will go on to long-term incapacity from the 98-99% with relatively simple problems, most of whom are likely to return to work quite rapidly more or less irrespective of any intervention. After a few months sickness absence, most will have complex mixtures of bio-psycho-social problems and the task would be to distinguish the 40% likely to continue on long-term incapacity from those who might (or could be helped to) return to work. The very different probability of incapacity as a function of time will have a major effect on some of the statistical properties and the practical outcomes of screening.

Accuracy of screening

Contemporary statistical texts view screening from a diagnostic perspective, and offer a variety of approaches that underpin evidence-based medicine. [13;14] Predicting the group of clients who will develop long-term incapacity (which can be accurate, but without knowing *which* individuals) needs to be distinguished from predicting that a particular individual will develop long-term incapacity (where the prediction remains a matter of probabilities and may turn out to be correct or incorrect).

The ability of any test to discriminate between those who go on to long-term incapacity and those who do not is commonly measured by its sensitivity and specificity, or its positive and negative predictive value. [14] Since a binary test basically has a 50% probability of being correct by chance alone, screening must comfortably exceed that level if it is to be statistically significant and useful in practice. It is a matter of design and choice of cut-off(s) to balance or 'trade-off' the number of false positives and false negatives to suit the particular purpose(s).

methods

The basic review methodology broadly followed that used previously, [6] and started with a search for published high quality reviews of prediction, predictors, and screening. Searches of electronic databases (MEDLINE, psychINFO, EMBASE, and Catchword) were supplemented with citation tracking, which retrieved material with a predominantly clinical focus. A second search was made for individual non-clinical studies, which were defined as large longitudinal studies, using 'administrative' data suitable for generic conditions, and with outcomes related to long-term incapacity. The same electronic databases were searched, but only a limited number of articles were found, suggesting the reports of interest lie un-indexed in the 'grey' literature. The eventual material found came mainly through citation tracking, personal databases, and communication with experts; little relevant material was found on Internet sites.

Altogether, some 1000 titles and 300 abstracts were considered. Selection of reviews and individual studies to include in the evidence base inevitably involved judgements of relevance and quality, as well as relevance to the common health complaints of primary interest. Two reviewers (GW and KB) independently selected the articles for inclusion, with a high level of agreement. Data were extracted and tabulated by one of three reviewers (GW, KB or SB) and checked by a second. Any disagreements were resolved by discussion.

The diversity of the selected material is reflected in the star system used to rate the strength of the evidence:

*** Strong evidence - *generally consistent findings in multiple, high quality scientific studies.*

** Moderate evidence - *generally consistent findings in fewer, smaller or lower quality scientific studies.*

* Weak, limited or conflicting evidence - *one scientific study or inconsistent findings in multiple scientific studies.*

The strength of the evidence needs to be distinguished from the strength of effect (the power of the predictor); a three-star system was used where *** = strong predictor, ** = moderate predictor, * = weak predictor. It should be stressed that these estimates are subjective and relative judgements by the present reviewers, based on all the evidence in the review. The rating gives some indication of those factors that are likely to contribute most to a screening tool, but that does not mean that they are interchangeable or will perform equally well in any given setting.

Findings

The findings of the review are presented here in summary form, but full details and the related data-extraction tables are available elsewhere. [1]

Reviews: clinical and psychosocial predictors

Twenty-eight reviews (Appendix, Table A1) met the inclusion criteria for the present review. Whilst their clinical area varies, two-thirds concern back pain. They cover mainly clinical and psycho-social predictors, and the outcomes are to some extent clinical in nature (clinical status, chronic pain and disability), yet a number also consider return to work, and a few consider benefits.

The basic principles and practice of screening to identify those at risk of chronic pain and disability, and the range of individual predictors, are generally agreed throughout this literature. The evidence from other conditions (even where moderate or limited) is consistent with the evidence from back pain. There is information on some 30 demographic, clinical, psychological, and occupational predictors, but it varies in terms of both strength of evidence and strength of prediction - see Table 1. The evidence gives some suggestion of how these individual predictors may be combined into methods of screening or 'screening tools'.

Table 1: Individual clinical and psychosocial predictors of chronic pain and disability

Predictor	Strength of Evidence	Strength of Predictor
Age	***	***
Pain intensity, functional disability	***	**
Poor perceptions general health	***	**
Psychological distress	***	***
Depression	***	**
Fear avoidance	**	**
Maladaptive coping (catastrophising)	***	**
Pain behaviour	***	**
Job (dis)satisfaction; worker disaffection	***	***
Duration of sickness absence	***	***
Employment status (not employed)	***	***
Expectations about return to work	***	***
Financial incentives	***	***
Unemployment rates	**	***
Clinical history (back pain only)	***	***
Physical demands of work	***	*
Co-morbidity	***	*
Anxiety	*	*
Gender	*	Variable
Marital status	*	Complex
Education	*	*
Clinical examination	*	*
Personality	*	*
Psychological history	*	*
Stressful life events	*	*
Alcohol & substance abuse	*	*
Ethnicity	**	Not significant

*** Strong ** Moderate * Weak

- Psychosocial factors ('yellow flags') are generally agreed to be stronger predictors of chronic pain and disability than biomedical factors or physical characteristics of work. To some extent psychosocial factors are also found to be stronger predictors than socio-demographic factors, though age is consistently found to be important.
- Most of the clinical evidence is about measures at the sub-acute stage predicting chronic outcomes. Seemingly, it is not possible to predict long-term outcomes with any accuracy using clinical and psychosocial variables in the early days of sickness absence; rather that only becomes possible by about 3-6 weeks.
- The best selection of individual predictors, and the construction and scoring of screening tools are outcome-specific.
- There are strong theoretical arguments, but limited evidence, that the best selection of individual predictors may be intervention-specific, because the risk of long-term incapacity is partly dependent on the success rate of the intervention. [6;15-17]
- The accuracy of prediction varies. The best sensitivity and specificity achieved in clinical and psychosocial screening is of the order of 80-90% but it is more usually about 70-80%; [1] this applies to vocational as well as clinical outcomes.

Individual studies: socio-demographic predictors

Thirty-one individual studies (Appendix, Table A2) met the inclusion criteria for the present review. These are all large longitudinal studies (prospective or retrospective) covering a range of countries. The majority are in social security, insurance, workers

compensation settings. Most are based on data available at the sub-acute (4-12 weeks) or chronic stage (3-6+ months) and address the prediction of long-term incapacity, early retirement, or disability pensions versus coming off benefits or return to work. This section of the literature revealed a rather different set of predictors - see Table 2.

Table 2: Individual socio-demographic predictors of long-term incapacity

Predictor	Strength of Evidence	Strength of Predictor
Older age (especially >50 or >55 years)	***	***
Type of occupation / education	***	**
Previous work record	**	**
Duration of current benefits	***	***
Employment status (not employed)	***	***
Expectations about return to work	***	***
Financial incentives	***	***
Local unemployment rate	***	***
Gender (female)	variable	variable
Marital / family status (complex)	***	variable
Medical condition	**	*
Ethnic background & immigrant status	*	*

*** Strong ** Moderate * Weak

- With few exceptions, these measures are entirely generic and not specific to any particular medical condition.
- There is consistent evidence on a range of employment and financial variables, as well as older age, but more limited and sometimes inconsistent evidence on demographic variables and medical conditions (the definition of which varies in different studies).
- Within and between studies, there is a great deal of overlap between the individual predictors. Usually, 2-4 predictors cover most of the variance, but the particular items vary across studies. Furthermore, certain items may not apply to an individual who may nevertheless be at high risk because of extraneous influences (e.g. disaffection due to downsizing or other local circumstances [18;19]). There is therefore an intrinsic limitation to the accuracy of 'one screening tool fits all' using a few predictors. [20]
- The best selection of individual predictors, and the construction of screening tools, varies with the particular social security or compensation setting and with the characteristics of the particular client group; predictors may be country-specific [21;22] or intervention-specific. [23;24]

Synthesis of evidence

The type, timing, and purpose of screening are inter-dependent, and cannot be considered in isolation. Screening and intervention(s) are also closely linked.

Types of screening

This review has revealed two main approaches to screening in the context of long-term incapacity: generic 'administrative' screening, and more detailed 'individual' screening. Clinical predictors focus more on disease rather than illness; psychosocial predictors focus on mechanisms of developing chronicity and obstacles to recovery; socio-demographic predictors focus on social factors.

The clinical literature (Table A1) and the administrative studies (Table A2) show that socio-demographic and psychosocial methods of prediction can each achieve sensitivity and specificity of the order of 70%. For various statistical and practical reasons, this level is relatively easy to

achieve in research samples, but is difficult to improve upon consistently. The possibility of improvement using serial data or repeated interviews [7] has received little attention. Despite a great deal of research, no simple, robust, and generalisable screening tool has yet emerged. [25]

There is no clear evidence on how well socio-demographic and psychosocial predictors correlate, whether one type overrides the other, or whether they predict the same individuals at risk. This is likely a reflection of (a) the differing data collected in clinical and social security studies which each focus on their particular area of interest, (b) the studies generally report different outcomes which are not perfectly correlated, and (c) multivariate analysis can select one variable to the exclusion of another when there may be only minor differences in the strength of their statistical relationships with outcome.

The major limitation of socio-demographic screening is its focus simply on identifying those at risk using risk 'markers' (e.g. age >55 years, which is clearly immutable). Such markers in themselves provide limited information about obstacles to return to work that can direct work-focused interventions, or about whether particular patients are likely to benefit from the intervention. The available evidence does not suggest that psychosocial screening (using risk 'factors') is likely to be any more accurate than socio-demographic screening simply for predicting long-term incapacity. However, psychosocial screening has major advantages in that it provides more individual information on obstacles to coming off benefit and returning to work, thus informing vocational rehabilitation and work-focused interventions directed to overcoming these obstacles, along with an indication of which individuals are likely to respond to those interventions. Such screening might need to be condition-specific or at least take the medical condition into account, and might need to be intervention-specific. To refine such a screening approach would require considerable further research and development.

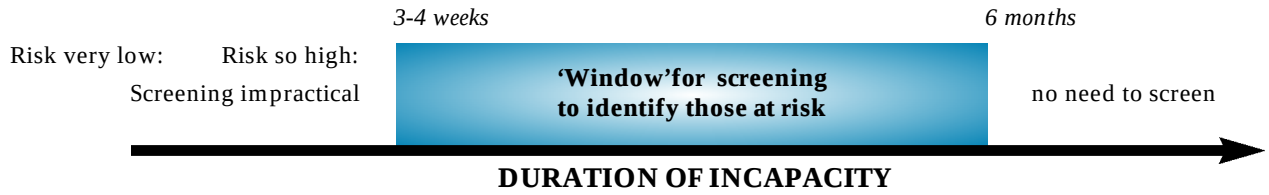
Timing

This review has demonstrated that the timing of screening and intervention is critical. The context, requirements, and purpose(s) of screening change with increasing duration of incapacity and increasing probability of long-term incapacity.

There is strong clinical evidence from back pain that the sub-acute stage is the optimal time for intervention, and is the point when intervention is most effective and cost-effective for returning people to work, and for reducing the chances of long-term incapacity. [6;15;26;27] In principle, this is likely to apply equally to other common health complaints. Earlier return to work can decrease the chances of recurrent problems, further periods of incapacity, and unemployment in the longer term. [28] By the chronic stage, psychosocial changes are more complex and entrenched, clients are increasingly distanced from the labour market, the obstacles to coming off benefit and returning to work are greater, and successful intervention is substantially more difficult. This all suggests that 'the most effective measure against long-term benefit dependency appears to be a strong focus on early intervention'. [29]

However, there is no evidence supporting screening in the very early days of sickness absence. Whilst some socio-demographic data will be available, statistically it is difficult to identify the very small minority of individuals likely to go on to long-term incapacity; the accuracy of prediction is likely to be low, and screening is unlikely to be cost-effective. Clinical and psychosocial predictors probably develop over time and there are no proven methods of assessing them or intervening effectively in the early days. Accurate prediction does become possible by the sub-acute stage, within about 3-4 weeks, using either socio-demographic or psychosocial measures. [30] Beyond 6-months of sickness absence, all patients should be regarded as being at high risk. There may therefore be an optimal 'window' for screening to identify those at risk of long-term incapacity, and to focus attention on obstacles to recovery / return to work (Figure 2).

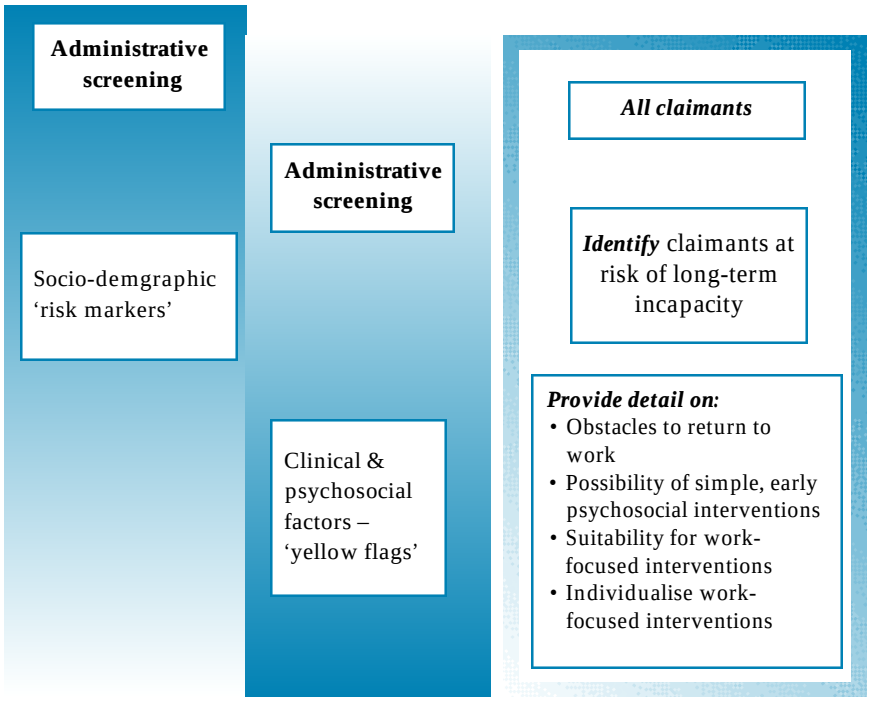
Figure 2. Theoretical optimal screening 'window'to identify those at risk of long-term incapacity.



Purpose

The use of screening simply to identify those at risk of developing long-term incapacity is of limited value in itself, unless it provides the basis for action. It has been convenient in this review to consider the two types of screening (administrative and individual) separately, but they are neither entirely separate nor mutually exclusive. Both provide information about individuals and about obstacles to coming off benefits and returning to work, albeit that the types of obstacles may differ. The relative influence of socio-demographic or clinical / psychosocial factors may vary over time, but that does not mean that either is confined to a particular stage of incapacity. Both may be combined into a logical and practical sequence in the screening process (Figure 3). This raises the possibility of staged screening: simple administrative or socio-demographic data might be used to identify those at higher risk who need more attention and resources, the next stage of which would include more detailed psychosocial assessment to inform targeted intervention strategies.

Figure 3. Types and purposes of screening: administrative and individual/psychosocial screening remain interrelated over time, though their relative utility may vary.



Conclusion

In conclusion, there is strong evidence for many individual socio-demographic and clinical / psychosocial predictors of chronic incapacity. The variable findings in different studies suggest that they do not combine into a simple, robust, and universal screening tool. Nevertheless, the evidence suggests that screening is possible and potentially valuable, and should be linked to the development of more effective rehabilitation programs and other work-focused interventions. Whatever the practical difficulties, the goal of reducing long-term incapacity and enabling disabled people to fulfil their potential in as full and normal a life as possible, makes that all worth pursuing.

Acknowledgements

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Debbie McStrafick for administration and database management.

Appendix

Abridged tables of papers included in the review: full summaries and data-extraction tables are presented elsewhere [1].

Table A1. Previous review papers

Authors	Population / setting	Clinical area	Type of review
Fishbain et al, 1993 [31]	Chronic pain patients (+ non-pain subjects)	Mainly low back pain	Systematic
Loeser et al, 1995 [32]	Workers compensation	Low back pain (LBP)	Systematic. Meta-analysis
Frank et al, 1996 [15 33]	Mainly clinical	LBP	Narrative
McIntosh et al, 2000 [34]	Clinical & Workers compensation	LBP	Systematic
Turk, 1997 [35]	Clinical	Largely LBP. Few studies post-herpetic neuralgia	Narrative
Turner et al, 2000 [36]	Workers compensation	LBP. Mixed injurie	Systematic
Kendall et al, 1997 [37] National Health Committee [38]	Accident Compensation Corporation	LBP	Narrative
Linton, 2000, [16;17] Linton, 2002 [39]	Mixed	Mainly LBP + Neck pain	Systematic
Waddell & Burton, 2000 [6]	Occupational health	LBP	'Best synthesis'
Truchon & Fillion, 2000 [40]	Mainly clinical (+ some workers compensation)	LBP	Systematic
Nordin, 2001 [41]	Mainly clinical	LBP	Narrative (lecture)
Shaw et al, 2001 [42]	Clinical	LBP	Systematic
Pransky et al, 2001 [43]		Occupational acute LBP	Narrative
Hogelund, 2001 [44]	Clinical studies. Economics. Public policy. Sociological studies	LBP	Narrative
Pincus et al, 2002 [30]	Clinical and work related	LBP	Systematic
Burdorf et al, 2002 [45] van Duijn et al, 2002 [46]	Clinical	LBP	Systematic. Meta-analysis
Crook et al, 2002 [47]	Clinical and work related	LBP	Systematic. Meta-analysis
Waddell et al, 2002 [48]	Clinical social security	LBP	Narrative
Hadler, 1999 [18;19]	Workers	Regional musculoskeleta 1 disorders	Narrative (editorial)
Brezinka & Kittel, 1995 [49]	Women	Coronary heart disease	Narrative
Shanfield, 1990 [50]	Clinical	Coronary heart disease	Narrative
Allen, 1990 [51]	Clinical	Coronary heart disease	Narrative
Botsford, 1995 [52]	Clinical	Coronary heart disease	Systematic
Beck & Koenig, 1996 [53]	Community Clinical	Mental ill health	Narrative
Joyce et al, 1997 [54]	Patients with chronic fatigue syndrome	Mental ill health	Systematic
Carter, 2000 [55]	UK working population	Mental ill health	Narrative
Tsang et al, 2000 [56]	Patients with psychiatric illness	Psychiatric illness	Narrative
Corden & Thornton, 2002 22	Social security recipients	Generic	Narrative

Table A2. Large individual studies predominantly based on socio-demographic and administrative data.

Authors	Country	System / setting	Type of study
Fenn, 1981 [57]	UK	General population	Retrospective longitudinal
Fenn & Harris, 1987 [58]	UK	General population + Social security	Retrospective longitudinal
Holmes et al, 1991 [59]	UK	Social security	Retrospective longitudinal
Lynch, 1991 [60]	UK	Social security	Retrospective longitudinal
Cornes, 1990 [61] Cornes, 1992[62]	UK	Insurance claims	Retrospective longitudinal
Cornes & Roy, 1991 [63]	UK	Medical Rehab	
Roy & Gilbert, 1993 [64]	New Zealand	Work-related injuries	
Rowlingson & Berthoud, 1998 [65]	UK	Social security	Cross-sectional + Prospective cohort
Dorsett et al, 1998[66]	UK	Social security	Prospective cohort
Mein et al, 2000 [67]	UK	Employment	Prospective cohort (Whitehall II)
Cockerham, 2002 [68]	UK	Social Security	Prospective cohort
Butler & Worrall, 1985 [69]	US	Workers compensation	Prospective cohort
Abenhain et al, 1988 [70] Rossignol et al, 1988 [71]	Canada	Workers compensation	Prospective cohort
Volinn et al, 1991 [72]	US	Workers compensation	Retrospective longitudinal
Cheadle et al, 1994 [73]	US	Workers compensation	Retrospective longitudinal
Abenhaim et al, 1995 [74]	Canada	Workers compensation	Retrospective longitudinal
Galizzi & Boden, 1996 [28]	US	Workers compensation	Retrospective cohort
Oleinick et al, 1996 [75] Gluck & Oleinick, 1998 76	US	Workers compensation	Retrospective longitudinal
Baldwin et al, 1996 [77] Johnson et al, 1998 [78]	Canada	Workers compensation	Retrospective longitudinal
Henessey & Muller, 1995 [79] Hennessey, 1997 [80] Schechter, 1997 [81]	US	Social security	Prospective cohort
Wagner et al, 2000 [82]	US	Disability insurance claims	Retrospective longitudinal
de Jong, 1987 [83]	Netherlands	Social insurance	Longitudinal
Kompier et al, 1990 [84]	Netherlands	Municipal employer	Retrospective longitudinal
van Amelsvoort et al, 2002 [85]	Netherlands	Working population	Prospective cohort
Manninen et al, 1997 [86]	Finland	Social Insurance	Prospective cohort
Krause et al, 1997 [87]	Finland	General population	Prospective cohort
Tuomi et al, 1997 [88] Tuomi et al, 1998 [89]	Finland	Occupational Health Institute	Prospective longitudinal
Biefang et al, 1998 [90]	Germany	Pension insurance	Prospective cohorts
Biering-Sorensen et al, 1999 [91]	Denmark	Social security pensions	Prospective
Hagen et al, 2000 [92]	Norway	National insurance + census	Prospective cohort
Eshoj et al, 2001 [93]	Denmark	Social insurance	Case referent study
Veerman, 2001 [94] Hansson & Hansson, 2000 [95] Hansson & Hansson, 2001 [96]	Denmark Germany Israel, Netherlands Sweden, US	Social security	Prospective cohorts
Nystuen et al, 2001 [97]	Norway	National medical insurance	Retrospective cross-sectional but length of absence noted

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CME Questions File

Editor's note:
The following CME questions are based on the review article Posttraumatic Vertigo, which was in the previous issue. The answers to these questions will appear in the next issue. The Editor acknowledges the valuable contributions of co-authorship in the original article by Dr. J. True Martin, MD, CIME as well as authorship for these questions.

Question #1

Which of the following sensory systems does not act in concert to provide information that assures equilibrium?

a. vestibular
b. visual
c. auditory
d. proprioceptive

Question #2

Otolithic receptors of the vestibular system detect what type of motion?

a. intestinal movement
b. angular acceleration
c. Brownian movement
d. linear acceleration

Question #3

Peripheral vestibular disturbances following blunt head injury produce which of the following symptoms?

a. vertigo
b. nausea
c. disequilibrium
d. all of the above

Question #4

Benign positional vertigo is caused by dislocated calcium carbonate crystals (otoconia) that break free from the utrical, where normally they are attached to hair cells that t provide gravitational information. Which of the three semi circular canals is most often affected?

a. anterior
b. horizontal
c. posterior
d. all of the above

Question #5

The classic hallmark signs of "posterior semi circular canaliasis" are:

a. latent onset of upbeat torsinal nystagmus
b. crescendo decrescendo pattern
c. fatigue
d. all of the above

Question #6

An abnormal communication between the fluid-filled perilymphatic space of the inner ear and the air-filled middle ear cavity represents which of the following conditions:

a. Meniere's disease
b. benign positional vertigo
c. perilymph fistula
d. canaliasis

Question #7

Formation of Perilymph fistula following barotrauma can occur as the result of two different mechanisms. Which is an example of explosive injury?

a. lifting heavy weights
b. vigorous coughing
c. traumatic blows to the head
d. a and b

Question #8

Complaints of "dizziness, lightheadedness, or instability and unsteadiness that seems triggered by events in their environment are consistent with? visual

a. canaliasis
b. Meniere's syndrome
c. Vestibular mismatching.
d. Perilymphatic fistula

CME questions for Article by Burton and Wadell in this issue. (pg 72)

(answers will be in next issue)

1. Which group forms the majority of claimants for long-term incapacity?
   1) Congenital disorders
   2) Cardiovascular disease
   3) Respiratory disease
   4) Relatively minor health complaints
2. What is the optimal window for screening?
   1) The first 2 weeks
   2) 3-4 weeks to 6 months
   3) 9-12 months
   4) There isn't one
3. For which of these predictors is there strong and consistent evidence?
   1) Gender
   2) Education
   3) Clinical examination
   4) Psychological distress

4 Which of these factors is a strong predictor?
   1) Older age
   2) Physical demands of work
   3) Clinical examination
   4) Co-morbidity

5. Sociodemographic and psychosocial methods of screening can each achieve a sensitivity and specificity of about:
   1) 50%
   2) 70%
   3) 90%
   4) They do not give comparable results

Answer Key for previous CME questions, Disability Medicine Vol 3, #2

The Questions can be found on page 41, Vol 3, #2.
Answers: 1.C, 2.D, 3.A, 4.B, 5.C, 6.A, 7.B

SURFACE EMG IN CHRONIC PARASPINAL PAIN: A REVIEW OF 44 CLINICAL TRIALS

Alex Ambroz, MD, MPH, Clara Ambroz, MD, MPH, Robert Zucker, MD, MPH, Don Mommano, DC, Marianne Caruso, RN, Carol O'Brien, RN-NP, Eugene Benjamin, MD

Editors note:

Use of surface EMG is controversial. The conclusions of this paper differ from that of two other reviews of this technology, which have been published in recent years. Haig et al. (1994, 1999) and Pullman et al (2000) concluded that there is insufficient evidence for SEMG utility in chronic spinal disorders. The more recent review by Pullman examined only four of the 44 studies included in this article. The editor is not sure however that despite the wide variety of analytical techniques used in these studies, the consistency of positive findings observed,, strengthens the our overall conclusion in this paper. The comments in the form of letters to editor from both believers and disbelievers are welcome.

ABSTRACT

The role of surface electromyography (SEMG) in chronic spine pain is examined in a review of published studies. Forty-four clinical trials published in peer reviewed journals were identified using Medline. Using a variety of protocols, these studies have found that SEMG study of paraspinal muscles is a useful method for the evaluation of chronic low back and neck pain. It is suggested that this testing be done routinely in cases where there is a need for disability and impairment determination.

INTRODUCTION

Chronic neck and low back pain (LBP) are major health problems in the U.S. Critical issues in the field of disability medicine involve the determination of the validity and severity of chronic pain complaints. Litigation involving LBP in this country has been estimated to cost $5 billion annually. In personal injury and Workers' Compensation cases it would be extremely valuable to be able to objectively quantify the severity of the pain. Numerous standardized questionnaires are used in disability evaluation, however, these are subjective and cannot be used to prove or disprove a patient's pain complaints. While lumbar spine x rays are routinely ordered by the Social Security Administration, it is well known that these studies are not generally useful in the evaluation of chronic LBP. Other imaging studies such as MRI's and CAT scans have high false positive rates. Jensen et al. (1994) found that the MRI's of 64% of 98 subjects under age 60 without low back pain revealed at least one positive finding.

Surface electromyography evaluates abnormal electrophysiological activity of the motor unit (nerve and muscle). Static electromyography evaluates the electrical activity of the motor unit in the absence of movement and in weight bearing. This is very important for it allows the quantification of abnormal electrophysiological activity in response to the stress of gravity and in face of injury. The quality of significance of these findings is what is interpreted and evaluated when combined with other data e.g., mechanism of injury, radiographic and lab findings.

Static electromyography in the axial skeleton evaluates the ability of the motor unit to stabilize the axial skeleton in face of gravity. Dynamic electromyography evaluates the ability of the motor unit to perform activity in face of gravity and movement. Static electromyography also provides the ability to evaluate and document response to care during the treatment regime and provides objective outcome assessment e.g., did the patient respond to care, improve and by how much. In other words, it provides quantitative data for qualitative interpretation.

MATERIALS AND METHODS

A Medline search was performed for the years 1982-2002 to obtain articles describing research studies in which surface electromyography (SEMG) was used as a noninvasive assessment of

spine pain. This search yielded a total of 132 articles. Criteria for inclusion in this review are the following: The study was published in a peer reviewed journal. The study included control subjects without pain. The study included a detailed description of the methodology used. The study results were presented in statistical terms.

RESULTS

Forty four studies met the selection criteria (See appendix). In these 44 studies a total of 1277 chronic spine pain patients were compared to 856 controls.

First, we review the studies using dynamic postures. Capodaglio et al. (1996) performed dynamic and static strength testing in conjunction with SEMG measurements. Significant pre-rehabilitation differences in SEMG activity were found between the pain patients and controls. Elert J et al. (2001) confirmed earlier findings that groups of patients with chronic pain have increased muscle tension and decreased output during dynamic activity compared to pain-free controls. Jalovaara et al. (1995) found that pain clearly modified paravertebral muscle activity, as the patients experiencing pain during the recording showed significantly higher EMG activity than those with no pain. Klein et al (1991) concluded that the use of EMG spectral parameters as discriminators of individuals with LBP was useful. Kramer M et al. (2001) observed that patients with severe pain were found to have lower electric muscle potentials in all investigated groups than patients with mild pain. The results of Leach R, (1993) support the use of the technique to detect muscle dysfunction related to LBP. Lu WW, (2001) concluded that electromyographic profiles showed that the muscle activity strategies varied between healthy persons and LBP patients. Mooney (1997) found that chronic LBP patients have abnormally weak lumbar extensor muscles. Ng J, (2002) noted that the reduced levels of activity of the multifidus muscle during axial rotation exertion in back pain patients may indicate that spinal stability is compromised. Oddsson L, (1997) concluded that surface EMG provides a powerful noninvasive tool to investigate the status and function of muscles. Paasuke M, (2002) determined that dynamic measurements were significantly higher in chronic LBP patients compared with controls. Peach J, (1998) were able to use spectral parameters to classify subjects with low back pain from those without. Radebold A (2001) concluded that patients with chronic low back pain demonstrated poorer postural control of the lumbar spine and longer trunk muscle response times than healthy control volunteers. Robinson ME, (1992) found that significantly less iEMG was produced by the chronic LBP group during both concentric and eccentric exertion. Roy SH, (1990) observed that low back pain and asymmetrical muscle function in rowers can be assessed on the basis of EMG spectral analysis. In another study Roy SH, (1989) was able to correctly classify lower back pain and control subjects using a two-group discriminant analysis procedure. Roy SH, (1995) observed that the discriminant function classified subjects into low back pain and normal groups, with 86% and 89% reliability. The applicability of this technique as a diagnostic screening method for lower back pain patients was discussed. Sihvonen T, (1991) an invaluable aid in detecting and objectifying disturbed function in paraspinal muscles in back pain patients and in general disability. Sihvonen T et al (1998) were able to show that the functional pattern of back extensors seemed to predict, and is more related to future back pain.

Next we review the studies using static postures. Alexiev AR, (1994) found that patients with LBP of less than 1 month duration show iEMG activity which is relatively higher, asymmetric, and more expressive on the painful side, under maximal and submaximal isometric trunk torque, in comparison with normals. Anders C, (2001) found that decreased difference in EMG amplitude between different parts of the same muscle could be demonstrated in patients with fibromyalgia. Arena JG, (1989) revealed controls to have significantly lower overall EMG levels than the intervertebral disk disorders and unspecified musculoskeletal backache groups. A significant diagnosis by position interaction was observed. Analysis of

simple main effects revealed this to be due primarily to control subjects during the standing position having lower EMG levels than all other groups, and intervertebral disk disorder subjects having higher EMG levels than all other groups during the supported sitting position. Chen WJ, (1998) observed that in knee flexion, LBP patients had significant SEMG pattern changes in knee flexion compared to pain free subjects. DeGood DE, (1994) data offered some limited support for the hypothesis that the back musculature of patients with chronic back pain is more reactive to psychological stress than are the same muscles of control subjects. Leinonen V, (2001) results provide evidence for the impaired feed-forward control of lumbar muscles in patients with sciatica. Lofland et al. (2000) evaluated the ability of the lumbar sEMG, behavioral observation, and a symtom checklist to correctly classify the participants. The participants were 51 patients with chronic low back pain and 30 healthy patients. The symptom checklist had the highest individual correct classification rate of 64%. The best combination of modalities was the symptom checklist and lumbar surface EMG rating of 70% correct. Lisinski et al (1998) evaluated the usefulness of surface EMG as an identification method in chronic low back pain. Plain, surface electrodes were attached to the skin overlying the erector spinae at the T7 and L4 vertebrae, approximately 3-4 cm from the midline of the back. 62 patients with chronic back pain were examined. The control group consisted of 31 people without back problems. The statistical values of mean amplitude, mean density and upper amplitude were found to be higher in the control group at the T7 level. Newcomer KL, (2002) found that significantly more subjects with LBP than control subjects exhibited absent firing of trunk muscles. Pope MH, (2000) found that wavelet transform methods improved the analysis of electromyographic signals in the time domain by facilitating the determination of the time of muscle activity. Nederhand MJ, (2000) concluded that patients with whiplash associated disorder Grade II could be distinguished from healthy control subjects according to the presence of cervical muscle dysfunction, as assessed by surface electromyography of the upper trapezius muscles. Traue et al. (1992) compared surface EMG recordings and subjective pain ratings were compared in a group of pre-chronic back pain. The authors found a significant and positive relationship with pain and muscle activity in the upper back. Ambroz et al. (2000) examined surface EMG as an additional tool in the comprehensive clinical evaluation of patients with chronic low back pain. EMG signals from the electrodes placed in thAe lumbar area of 30 patients with chronic low back pain and 30 non-pain control subjects were compared. The muscle activity mean values were three fold higher in the chronic low back pain patients than in the control group

Conclusions

We have reviewed 44 clinical trials from peer reviewed journals in which surface electromyography was shown to be able to differentiate patients with spine pain from pain free controls. We conclude that SEMG is a useful diagnostic tool in the evaluation of spine pain patients. It is suggested that this testing be done routinely in cases where there is a need for a disability and impairment determination.

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Appendix

RESEARCHER NAME	STATIC/DYNAM	CONTROL	LBP/CNP	JOURNAL	YEAR
1 Alexiev A.R. 1994	Static	40	40	Elec Clin Neuro	1994
2 Ambroz C., et al 2000	static / dynamic	30	30	J Occup Envirn Med	2000
3 Anders C., et al 2001	static	10	15	Clin Exp Rheum	2001
4 Arena J.G., et al 1989	static / dynamic	29	178	Pain	1989
5 Arena J.G., et al 1990	static / dynamic	20	29	J Psychphysiol	1990
6 Arena J.G., et al 1991	static / dynamic	20	46	Pain	1991
7 Capodaglio P., et al 1996	static / dynamic	4	4	G Ital Med Lav	1996
8 Cassisi J.E., et al 1993	static / dynamic	12	21	Spine	1993
9 Chen W.J., et al 1998	static	40	47	Clin Biomech	1998
10 Chiou W-K, et al 1999	static	40	47	Int J Indust Ergon	1999
11 Collins GA., et al 1982	static / dyna ??	11	11	Scand J Rehabil Med	1982
12 DeGood D.E., et al 1994	static	12	20	Percept Mot Skills	1994
13 Elert J., et al 2001	dynamic	27	59	J Rheumatol	2001
14 Jalovaara P., et al 1995	dynamic	11	43	Eur Spine J	1995
15 Kankaanpaa M., et al 1998	dynamic	15	20	Arch Phys Med Rehb	1998
16 Klein A., et al 1991	dynamic	15	7	Phys Ther	1991
17 Kramer M., et al 2001	dynamic	32	32	Eur Spine J	2001
18 Leach R.A., et al 1993	dynamic	6	10	J Mani Physiol Ther	1993
19 Lee D.J., et al 1992	static / dynamic	31	8	Eur J Appl Physiol O	1992
20 Leinonen V., et al 2001	static	15	20	Spine	2001
21 Lisinski P., et al 2000	static	31	62	Eur Spine J	2000
22 Lofland K.R., et al 2000	static	30	51	Appl Psych Biofeedb	2000
23 Lu W.W. , et al 2001	dynamic	20	20	J Spinal Disord	2001
24 Mayer TG., et al 1989	static / dyna ??	11	10	Spine	1989
25 Miller DJ., 1985	static / dynamic	11	11	Phys Ther	1985
26 Mooney V., et al 1997	dynamic	8	8	J Spinal Disord	1997
27 Nederhand M.J., et al 2000	static / dynamic	19	18	Spine	2000
28 Newcomer K.L., et al 2002	static	20	20	Arch Phys Med Rehb	2002
29 Ng J.K.-F., et al 2002	dynamic	12	12	J Ortho Research	2002
30 Oddsson L.I.E., et al 1997	dynamic	27	8	J Rehab Res Dev	1997
31 Paasuke M., et al 2002	dynamic	12	12	J Back Musc Rehab	2002
32 Peach J.P., et al 1998	dynamic	18	21	Spine	1998
33 Pope M.H., et al 2000	static	11	11	Clin Biomech	2000
34 Radebold A.,et al 2001	dynamic	14	16	Spine	2001
35 Radebold A.,et al 2000	dynamic	17	17	Spine	2000
36 Robinson M.E, et al 1992	dynamic	12	16	J Spinal Disord	1992
37 Roy S.H., et al 1995	dynamic	42	28	Spine	1995
38 Roy S.H., et al 1990	dynamic	17	6	Med Sci Sports Exer	1990
39 Roy S.H., et al 1989	dynamic	12	12	Spine	1989
40 Sihvonen T., et al 1991	dynamic	25	87	Arch Phys Med Rehb	1991
41 Sihvonen T., et al 1998	dynamic	21	32	Arch Phys Med Rehb	1998
42 Simms R.W., et al 1989	static ?	10	17	Proc Sym Myo / Fibro	1989
43 Suter E, et al 2001	static	16	25	Spine	2001
44 Watson PJ., et al 1997	static / dynamic	20	70	Clin Biomech	1997
		856	1277		

Inverse relationship between the level of neck pain disability and EMG level

Secondary Gain in Auto accident claims, A Myth or Mayhem?

Ranga C. Krishna M.D, Joseph Robinson, G. Parnes, Y. Margullies M.D

Editor's Note: The question of secondary gain after accidents is not new, yet it is almost impossible to quantify due to the sensitivity of the matter in this country as well as the liberal no fault laws. The no fault "market" is a multi billion-dollar industry, which includes insurance payments and medical and legal providers fees. This pilot study with its admitted limitation does raise legitimate questions for future research on this subject. Thoughts of readers on this subject through letters to editor and other related articles would be welcome.

The study from Lithuania, (J. Neurol. Neurolosurg. Psychiatry 1999;66: 279-283) where secondary gains for road accidents' victims are hard to achieve, raised our attention to the problem in New York, where litigation following road accident appears to be a very common practice.

In our community many people involved in road accidents find themselves almost immediately involved in litigation. The insurance companies and the legal system funnel the claimants to a chain of independent medical evaluation (IME) providers for objective evaluation of the physical and psychological damage caused by the accident. Parallelly, the victims are referred to a network of medical care providers who treat them under the "no fault" system.

We ran a pilot study and examined 77 consecutive patients who where referred by independent medical evaluation providers for an IME. The inclusion criteria were as follows:

- Adult patients were involved in a road accident and sought medical help in the days close to the accident.
- All were treated medically in an emergency room or otherwise, but not hospitalized.
- All were available for physical examination 3 months after the accident.

IME providers who catered either to the insurance company or to the legal system contracted by the patients referred all the patients. The examining physicians have and had no knowledge who are the IME companies' clients and who requested the report and paid for it.

All the patients underwent examination by a senior neurologist and a senior orthopedic surgeon independently. The examination included a thorough interview regarding the medical history and the history of the accident, and a complete physical examination.

Data regarding the treatment and any diagnostic studies the patients had in the three months between the accident and the examination was recorded.

All but one patient were found to have no objective findings related to the accident on physical examination three months after the accident. One patient had a knee surgery during this time. This patient was discharged from emergency room on the night of the accident and later diagnosed as having internal deraignment of his knee by his private physician; subsequently he underwent surgery within the three month allocated to this study. We could not receive the operative report.

Most of the patients complained of neck and back pain, some of them on knees and shoulders pain. Small number of patients complained of other areas of the body. All the patients complained on combination of areas of pain, rather then a single location.

The common denominator of this group of patients was their involvement in litigation. From these preliminary observation it appears that patients who were involved in a road accident sought medical treatment but not hospitalized, and are involved in litigation, did not demonstrate any objective findings three months after the accident.

The uniform results of this group are intriguing. We wonder what will be the results in patients who were involved in road accidents but not in litigation. What would be the results in people who were involved in accidents and did not seek help whatsoever? We also wander if we could correlate this group of patients to the damage caused to the vehicles involved. The group of patients we examined has a significant amount of resources invested in their diagnosis and treatment. In this pilot study the diagnostic investigations did not lead to any change in decision-making process regarding their treatment. Moreover, most of the positive findings on the various examinations did not correlate to the patients' complaint, or to the physical examination.

We note that as control we contacted 50 patients by phone who were treated in our facility for complains resulting from a road accident at least two years prior to the phone interview. Among those whose case was settled, there were still people (18 patients) that described pain and continued their therapy on their own expense.

The incentive to receive and provide treatment after road accidents is overwhelming in the environment of the no fault law. Though the insurance companies are the direct payers of the no fault industry, the ultimate payer is the citizen, on whom the expenses are rolled on. The question is how to streamline cost-effective care for individuals involved in road accidents, complain of pain but have no obvious injury.

Health Insurance Portability and Accountability Act of 1996 ("HIPAA") The United States Government Imposes New Burdens Upon Physicians Where there is No Patient Relationship

By: Alan S. Gold, Esquire, Steven Mandel, M.D., Tanya M. Sweet, Esquire

Editors note:

This article constitutes a brief overview of the literally hundreds of pages of regulations that now address the issue of privacy of protected patient information. Future articles will address practical steps for compliance with the regulations by the physician who performs independent medical examinations and other services for insurance carriers and employers pursuant to a variety of statutes. Further, this article does not purport to provide legal advice. The authors have submitted it for informational purposes and to urge those affected by these regulations to review them and to consult competent counsel concerning the implications of those regulations upon their conduct.

The medical malpractice insurance crisis has gripped the entire nation. Instead of addressing it, Congress and the United States Department of Health and Human Services ("HHS") have imposed yet new substantial burdens upon physicians who perform independent medical exams or even review medical records for insurance carriers or attorneys representing Plaintiffs and Defendants in medical malpractice or healthcare litigation. When Congress enacted the Health Insurance Portability and Accountability Act of 1996 ("HIPAA")

its stated purpose consisted of protecting health insurance coverage for workers and their families when they changed or lost their jobs. But another provision of HIPAAat Title II required HHS to establish national standards for electronic healthcare transactions by healthcare providers, health plans and employers. It also required HHS to address the security and privacy of health data. HHS has now issued its final regulations. Those regulations have caused much controversy. Those affected by them, which constitutes virtually anyone who comes into contact with healthcare information of individuals, have complained bitterly of the burdens these regulations impose.

The purpose of this article consists of providing a general overview of those regulations as they may affect physicians who provide independent medical examinations or opinions for insurance carriers or employers in the context of worker's compensation claims, medical malpractice claims, Family Medical Leave Act litigation and litigation

pursuant to the Americans With Disabilities Act . These rules apply to virtually any type of health information. Protected health information as defined in the rules includes all forms of information, including, electronic, oral and paper communications. Although some commentators argue that Congress may have limited HHS's authority to regulate non-electronic communications, HHS maintains it has ample legal authority to regulate non-electronic communications, See The Nationalization of Health Information Privacy Protections, 8 Conn. Ins. L.J. 283, By Lawrence O. Gustin, James G. Hodge, Jr., and Lauren Marks. The regulations took effect on April 12, 2003.

Who is covered by the regulations? It applies to any person or entity that provides medical treatment or healthcare service including physicians conducting independent medical examinations and examinations for employers and insurance carriers. That definition includes physicians, nurses, hospitals, medical clinics, and any other healthcare professional. If an employer has a nurse or doctor on staff to care for injured workers, that employer may become a healthcare provider. A worker's compensation insurer that provides rehabilitation services also may be a healthcare provider. Physicians who provide independent medical examinations or examinations for insurance carriers or for employers in any context, whether for employment purposes or for the purposes of determining liability under a variety of federal and state Statutes, have a responsibility to comply with the regulations. The regulations do apply.

The original regulations issued by HHS only applied to electronically maintained information. The amended regulations eliminate that restriction and apply it to all healthcare information regardless of how maintained, it applies to all information. Thus, you cannot avoid compliance with the regulations by reporting to the employer or insurance carrier orally. Consequently, every time a physician examines an individual for an insurance carrier or for an employer for purposes other than the provision of healthcare, the physician has to obtain an authorization from the individual before releasing the information to anyone unless for some reason the physician intends to release it to another physician for the purposes of the provision of health treatment. In the situation of an independent medical exam that appears highly unlikely. The

authorization that must be obtained is defined in detail in the regulations. It is a customized document that gives covered entities permission to use specific protective health information for specified purposes. If you do not obtain the authorization, you cannot provide the information to the employer or the insurance carrier.

The authorization you obtain must identify the information to be disclosed in a specific and meaningful fashion. It must provide the names of the persons or organizations who will make and receive the use of the disclosures. It must explain the purpose for each request. It must notify the individual of the right to refuse to sign the authorization without negative consequences to health plan eligibility. It must be written in plain language. It must include an expiration date. It must explain that the individual has the right to revoke the authorization at any time in writing, except regarding actions taken by the physician upon reliance upon the authorization. The exercise of the right of refusal cannot be used to deny health insurance.

The HIPAA regulations will be enforced by the Office for Civil Rights of HHS. Violations can result in civil and criminal penalties, including fines up to $250,000 and up to ten (10) years in prison. There appears to be no private cause of action under HIPAA.

HIPAA regulations require that when you examine individuals in the office,

you take reasonable measures to insure that no one other than the necessary individuals obtain the healthcare information you have obtained from the individual. HHS indicates in its explanation concerning the regulations that it generally does not consider facility redesigns as necessary to meet the reasonable standard for minimal necessary uses. However, physicians who conduct independent medical exams in their office may need to make certain adjustments to their facilities to minimize access such as isolating and locking file cabinet or records rooms or providing additional security such as passwords on computers maintaining personal information.

Physicians conducting independent medical examinations or examinations for lawyers should also take into account

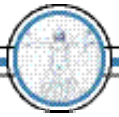
their ability to configure their record systems to allow access to only certain fields and the practicality of organizing systems to allow this capacity. For example, it may not be reasonable for a small solo practitioner who has largely a paper-based records system to limit access to employees with certain functions to only limited fields in a patient's record log or employees have access to the complete record. Alternatively, a hospital with an electronic patient records system may reasonably implement such controls, and therefore, may choose to limit access in this matter to comply with the rules.

Some physicians have expressed concern about their ability to maintain sign-in sheets in their waiting rooms. The regulations do not intend to prohibit the use of sign-in sheets. But HHS concedes that the privacy rules are ambiguous about this common practice. HHS has indicated its intention to propose modifications to rule to clarify this and similar practices that are permissible. The regulations do not require that you retrofit your offices to provide private rooms and soundproof walls to avoid any possibility that a conversation be overheard. You must provide reasonable safeguards to avoid prohibited disclosures. Examples could be adding curtains or screens to areas where oral communications often occur between physicians and patients who are among professionals treating the patients. In an area where multiple patients staff communication routinely occur, use of cubicles, dividers, shields, or similar barriers may constitute a reasonable safeguard. You have to document oral communications that are not related to treatment. If you have an oral communication with the employer, you have to document it indicating the date and the subject matter of the discussion with some particularity.

Even after you obtain an authorization, the regulations require that every time you disclose information you give notice of that disclosure. The notice must be in plain language.

The individuals whom you have examined also have a right to access their healthcare information and your analysis of it. Access rights include an on site inspection of the records and the provision of copies of those records. You must act within thirty (30) days upon the request for access to health data. If the individual agrees in advance, you may provide a summary of the information instead of the actual documents. The regulations permit narrow unreviewable reasons for denial of requests for psychotherapy notes, information likely to be used in a civil, criminal or administrative proceeding and request by inmates to their correctional facility or healthcare provider that may threaten the health or safety of the individual or others. In most cases, information that a physician obtains in the context of an examination for insurance carrier or employer will likely be used in a civil or administrative proceeding. Thus, the physician would have the right to deny access to that information by the individual whom he or she has examined.

The individuals you examine can ask to amend their healthcare information if they report inaccuracies or missing information. You must act within sixty (60) days on a request to amend. If you agree to the amendment you must identify the records that are affected by the amendment, append or provide a link to the amendment and inform the individual of the amendment. You must also notify anyone who has the data that they must amend the records concerning the individual. You may deny amendments in certain circumstances including a determination that the records are accurate and complete. You must then give written notice of your action to the individual.



Individuals have a limited right to receive an accounting of disclosures of their healthcare information over a six (6) year period prior to the request. The accounting must include the name of the person or entity that received the information and their addresses, if known, the day of the disclosure, a brief description of the information disclosed and a brief explanation of the reasons for disclosure, if not authorized by the individual.

If you decide to deny access to the individual of any part of his/her healthcare records, the HIPAA regulations require a fair and informed review process. In addition to the requirement that the denial be in writing and in plain language it must explain the reasons for denial, any rights for review of the decisions and the methods of complaint to you concerning the denial 45 C.F.R. §164.524(d)(2)(i)/(iii). Access must be granted to any information if it does not meet the specific grounds for denial Id. §164.524(d)(1). If a review of the denial is warranted, it must be conducted by a licensed healthcare professional who is designated by the party or entity but who is not directly involved with the decision to deny access. Id. §164.524(d)(4).

Under HIPAA, HHS cannot preempt state health information or privacy laws that are more protective of patients than the national law. The HIPAAA regulations constitute a federal floor of protection. Thus, any state law which places more restrictions upon you than the HIPAA regulations still must be complied with.

IThese regulations not only apply to the physician performing the IME but to any business associate to whom the physician conveys personal health information as part of that entities performing services for the physician. A business associate includes legal, actuarial, accounting, consulting, management or financial services if it involves a disclosure of individually identifiable health information. The business associate rule as set forth in the regulations provides that a covered entity may only share potential health information with a business associate if the covered entity of the business associate first enter a business associate contract. The contract must specify the scope of permitted uses and disclosures of the health information. In general, the contract may not however authorize any use of the disclosure as it would violate the physician's obligation under the privacy rule. The contract must prohibit the business associate from using health information for purposes beyond the scope of the agreement or as required by law. The contract must require the business associate to use appropriate safeguards to protect the health information from improper disclosure and to report any unauthorized uses or disclosures to the physician. The contract must require the business associate to pass through its privacy obligations to any of its contractors or sub-contractors. It must provide that the business associate make available all health information to the individual to whom it relates. The contract also must require that the business associate make available information that allows for an accounting of disclosures of individual personal health information for six (6) years prior to the date on which the accounting is requested. The contract also must require the business associate to make his books and records available to the secretary of HHS for purposes of determining the covered entity's compliance. The contract also must mandate that the business associate return and destroy all personal health information after the termination of the contract. It also must provide for a termination of the contract by the covered entity if it determines that the business associate has violated the material term of the contract.

The business associate rules constitute the most controversial aspect of the regulations. It allows HHS to do by the back door what it lacks the ability to do through the front door. It turns the physician into a policeman concerning the contractors with whom it does business.

A physician who conducts an independent medical exam or who evaluates a patient or who evaluates an employee or an employer for workman's compensation purposes or for litigation purposes may find him or herself in the role of a business associate and will have to comply with all the restrictions imposed upon business associates by the regulations.

The privacy regulations contain several exceptions that may limit their impact on claims handling in civil litigation. The most important is for disclosures "required by law." The regulations defined "requires by law" as a mandate contained in the law that compels a covered entity to make a use of disclosure of protected health information and that is enforceable in a court of law. "Required by law" includes, but is not limited to, court orders and court-ordered warrants; subpoenas or summons issued by a court ...or an administrative body...a civil or authorized investigative demand... and statutes or regulations that require the production of information. 45 C.F.R. §164.501.

The first "required by law" exception states that if:

> "...a business associate is required by law to perform a function or activity on behalf of a covered entity or to provide a service described in the definition of a business associate...to a covered entity, such covered entity may disclose protected health information to the business associate to the extent necessary to comply with the legal mandate. 45 C.F.R. §164.502(e)(3)(ii).

An additional regulation provides:

> A covered entity may use or disclose protected health information to the extent that such use or disclosure is required by law and the use or disclosure complies with and is limited to the relevant requirement of such law. 45 C.F.R. §164.512(a)(1)A further regulation states:
>
> > A covered entity may disclose protected health information in the course of any judicial or administrative proceeding:...(I) In response to an order of a court or administrative tribunal; (ii) In response to a subpoena, discovery request, or other lawful process, that is not accompanied by an order of court or administrative tribunal. 45 C.F.R. §164.512(e)(1)(i) and (ii).

A physician may be able to disclose information to employers and insurers without complying with the regulations. See The Law of Unintended Consequences: HIPAA and Liability Insurers, 69 Def. Couns. J.2 96 (July 2002) by Richard J. Antognini. Prudence, however, would dictate compliance until this issue has been resolved either by HHS or by litigation.

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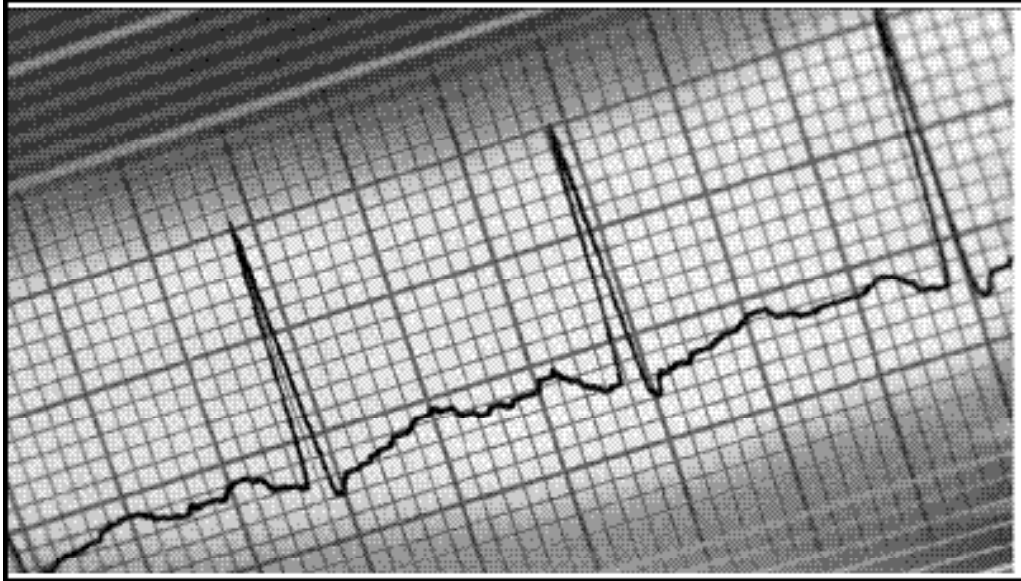

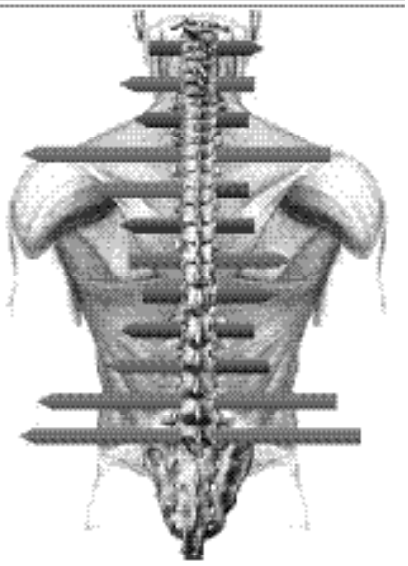

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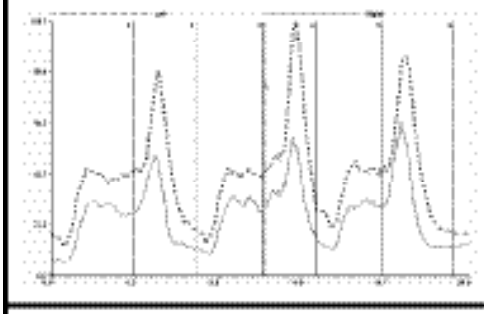

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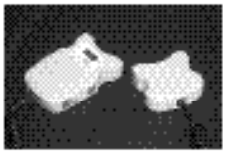

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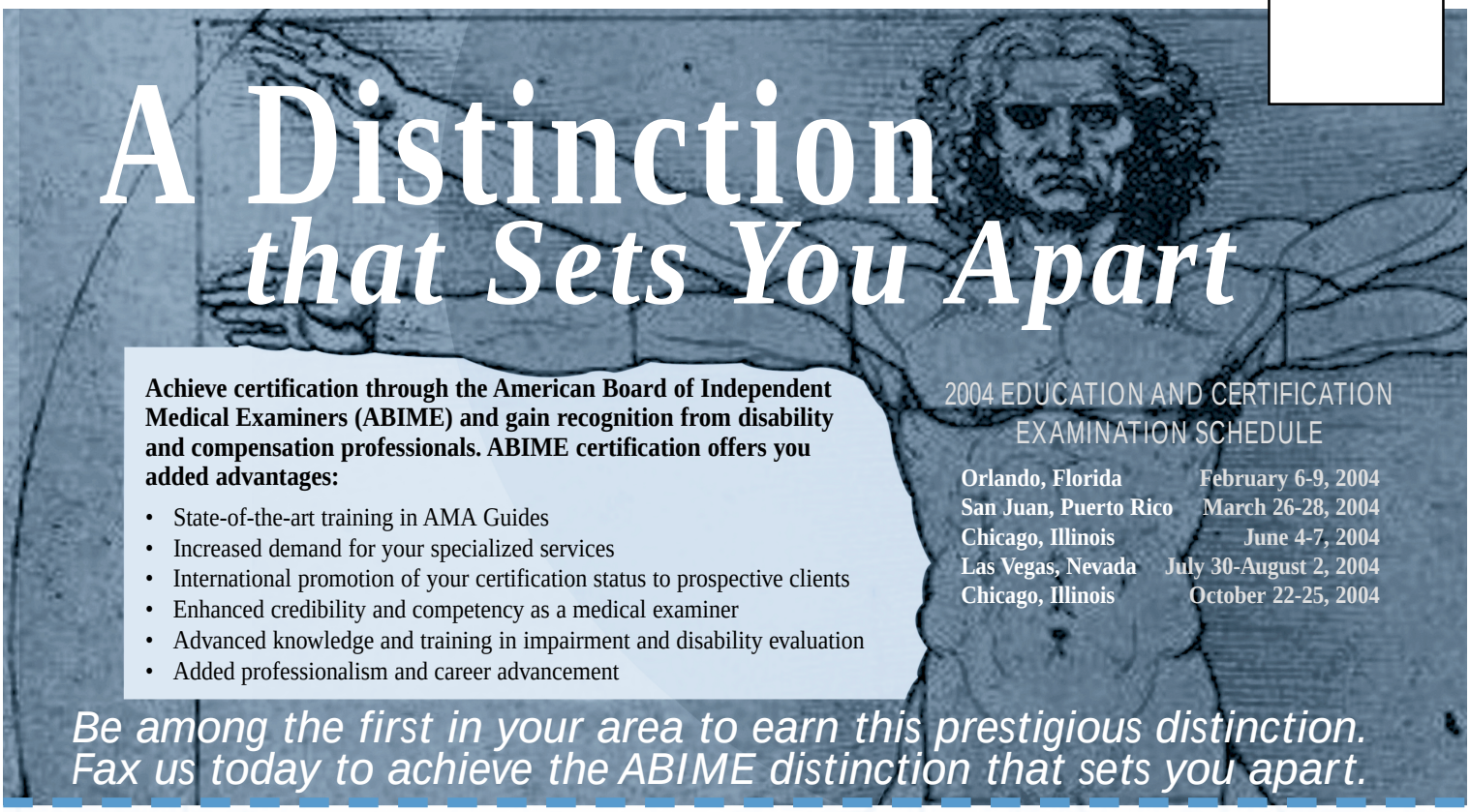

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